APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,427	03/26/2004	Eric Hamilton	18602-08744 (P3257US1)	2639

61520   7590   10/22/2009

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EXAMINER
RAO, ANAND SHASHIKANT

ART UNIT	PAPER NUMBER
2621	

MAIL DATE	DELIVERY MODE
10/22/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *7/09/09*.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-39* is/are pending in the application.

  4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1,3-16,18-24,26-32 and 34-39* is/are rejected.

7) ☒ Claim(s) *2,17,25 and 33* is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

  a) ☐ All   b) ☐ Some * c) ☐ None of:

    1. ☐ Certified copies of the priority documents have been received.

    2. ☐ Certified copies of the priority documents have been received in Application No. _____.

    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Request for Reconsideration

1.   Applicant's arguments filed on 7/9/09 with respect to currently rejected claims 1-39 have

been fully considered but they are not persuasive.

2.   Claims 1, 3-16, 18-24, 26-32, 34-39 remain rejected under 35 U.S.C. 103(a) as being

unpatentable over Hui in view of Hurst and further in view of Werner et al., (hereinafter referred

to as "Werner"), as was set forth in the Office Action of 5/12/09.

3.   The Applicant presents two arguments contending the Examiner's rejections of claims 1,

3-16, 18-24, 26-32, 34-39 under 35 U.S.C. 103(a) as being unpatentable over Hui in view of

Hurst and further in view of Werner et al., (hereinafter referred to as "Werner"), as was set forth

in the Office Action of 5/12/09. However, as discussed in the Interview Summary of 7/14/09,

and after further consideration the presented arguments for the Examiner's benefit, the Examiner

must respectfully disagree, and maintain the grounds of rejection for the reasons that follow.

        After referencing the previous conducted telephone interview (Request for

Reconsideration of 7/9/09: page 20, lines 4-9), summarizing the salient features of claim 1

(Request of Reconsideration of 7/9/09: page 20, lines 10-24), reviewing the currently pending

rejection as based on the combination of references (Request for Reconsideration of 7/9/09: page

20, lines 25-26; page 21, lines 1-3), and providing Applicant interpretation of the applied tertiary

reference (Request for Reconsideration of 7/9/09: page 21, lines 3-8), and the explanation of the

applied sections of Werner (Request for Reconsideration of 7/9/09: page 21, lines 9-15), the

Applicant's argue that the manipulation of the λ parameter fails to address the "…determining a

quant with which to encode the frame, the quant being a function of at least the buffer's fullness,

a base quant envelope and a base quant envelope control associated with the frame, wherein the

base quant envelope and the base quant envelope control are based on the type of the frame, and

the fluctuation of the base quant envelope is controlled by the base quant envelope control…"

limitation as specified (Request for Reconsideration of 7/9/09: page 21, lines 16-21; pages 22,

lines 1-2). The Examiner respectfully disagrees. As discussed in the interview summary, the

Examiner notes that the limitation of a "base quant envelope" to mean a finite set of quantization

step sizes which is less than the full range of available values (i.e. an envelope of values), and

with this interpretation, the Examiner pointed out that Werner's λ parameter is used to generate a

"truncated" set of quantization values, and this truncated set of quant values, reads upon the

limitation. It is noted that since the λ parameter is directly responsible for generating a

quantization value (Werner: column 4, lines 15-25) and the two are clearly defined by the

reference as being interrelated (Werner: column 4, lines 60-65). It is further noted that since

quantization interval (i.e the quantization envelope) is transmitted (Werner: column 4, lines 40-

45; column 5, lines 9-35), the Examiner asserts that a base quantization envelope and base

quantization envelope control is used to determining the λ parameter. Werner readily makes

manifest that the range of amplitudes of DCT coefficient values are for mapping purposes of the

λ parameter, which is then used to generate the appropriate quant value (Werner: column 4, lines

25-65; column 5, lines 1-35). Accordingly, the Examiner maintains that the limitation is firmly

met.

Lastly, the Applicants argue that Werner fails to address a quantization according to a

frame type, as required by the claims (Request for Reconsideration of 07/09/.09: page 22, lines

3-10). The Examiner flatly disagrees. The citation is not directed towards a promising goal of

future work, but rather clearly suggests adapting the disclosed intra frame quantization for both P

and B (Werner: column 14, lines 45-50). The Examiner notes that since the transcoder is based

on a TM5 type (Werner: column 4, lines 1-10) coding application (Werner: column 14, lines 29-

37; column 12, lines 35-60), it would be obvious for one of ordinary skill to use that teaching to

adapt the quantizing transcoder for predictive frame mode processing. It is further noted that

Werner itself strongly discloses that such a step for adapting is well within the purview of one of

ordinary skill in the art, and is plainly not something that one of ordinary skill would labor over,

but rather, it the view of the reference, is a mundane consideration (Werner: column 7, lines 10-

20). Furthermore, the Examiner would further note that even if Werner failed to adequately,

contemplate quantization according to a frame mode in a manner that reads on the claims, the

Examiner asserts that both Hui and Hurst address this conceptually (Hui: column 9, lines 55-67;

column 10, lines 1-43; Hurst: column 7, lines 5-20). In response to applicant's arguments against

the references individually, one cannot show nonobviousness by attacking references

individually where the rejections are based on combinations of references. See *In re Keller, 642*

F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375

(Fed. Cir. 1986). Were Werner shown to be deficient in this feature, the Examiner notes that

such a deficiency would be addressed by Werner's combination with the primary and secondary

references, which as discussed above would also address the feature.

Allowable Subject Matter

4.   Claims 2, 17, 25, and 33 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of the

base claim 1, 16, 24, and 32, respectively.

Dependent claims 2, 17, 25, 33 further recite in conjunction a method for robust single-

pass variable bit rate encoding of a video sequence, "…allocating a segment of the buffer for

keeping track of over/underused bits for I frames, a segment for keeping track of over/underused

bits for P frames and a segment for keeping track of over/underused bits for B frames;

initializing each segment of the buffer to a default initial fullness; determining a number of I

frames per GOP, a number of P frames per GOP and a number of B frames per GOP, based on a

nominal GOP pattern; for each frame of the video sequence, determining the quant with which to

encode that frame as a function of at least the fullness of the segment of the buffer for that frame

type, a base quant envelope and a base quant envelope control associated with that frame type;

and for each GOP of the video sequence, performing the following steps: before encoding any

frame of that GOP, calculating a GOP bit target for that GOP, the GOP bit target being a

function of at least the number of I frames, P frames and B frames per GOP, the target bit rate for

the video sequence and any bits carried over from a last encoded GOP; after encoding each

frame of that GOP, calculating over/underused bits by subtracting allocated bits from actual used

bits, adding any over/underused bits to an appropriate buffer segment to an extent to which the

appropriate buffer segment is not over/underflowed and storing any over/underflow bits in a

counter; and after encoding all frames of that GOP, redistributing over/underused bits between

the segments of the buffer as a function of at least a total number of over/underused bits in the

buffer and the number of I frames, P frames and B frames per GOP and storing an indication of a

number of over/underused bits with respect to the allocated target bits for that GOP to carry over

to the next GOP..." which are features that are not anticipated nor obvious over the art of record.

Accordingly, if finally rejected claims 1, 3-16, 18-24, 26-32, and 34-39 are canceled, and if

claims 2, 17, 25, and 33 are amended as indicated above, the application would be placed in

condition for allowance.

Conclusion

5.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Andy S. Rao whose telephone number is (571)-272-7337. The

examiner can normally be reached on Monday-Friday 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mehrdad Dastouri can be reached on (571)-272-7418. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andy S. Rao
Primary Examiner
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asr
/Andy S. Rao/
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October 21, 2009